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10/826,229	04/16/2004	Matthew G. Borlick	TUC920030190US1	9662
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DALE F. REGELMAN 4231 S. FREMONT AVENUE TUCSON, AZ 85714			NAHAR, QAMRUN	
		ART UNIT	PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/826,229	BORLICK ET AL.	
	Examiner Qamrun Nahar	Art Unit 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 April 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-26 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 April 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>04/16/2004</u>	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

1. Claims 1-26 have been examined.

### *Claim Objections*

2. Claim 19 is objected to because of the following informalities: “usable with a **usable with a**” on line 1 of the claim should be “usable with a”. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 1 recites the limitation "the (i)th phase" in line 12 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "(i)th phase".

Claims 2-10 are rejected for dependency upon rejected base claim 1 above.

6. Claim 3 recites the limitation “a Concurrent Code Load” on line 2 of claim 3, which renders claim 3 indefinite because claim 1 recites “a Concurrent Code Load” on line 7 of claim 1. It is unclear whether the Concurrent Code Load on line 2 of claim 3 refers to the Concurrent

Code Load on line 7 of claim 1 or whether this is another Concurrent Code Load. The limitation “a Concurrent Code Load” on line 2 of claim 3 is interpreted as “the Concurrent Code Load”.

7. Claim 3 recites the limitation “the (i)th” in line 5 of claim 3. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as “the (i)th indicator”.

8. Claim 4 recites the limitation “an existing code” on lines 1-2 of claim 4, which renders claim 4 indefinite because claim 1 recites “existing code” on line 5 of claim 1. It is unclear whether the existing code on lines 1-2 of claim 4 refers to the existing code on line 5 of claim 1 or whether this is another existing code. The limitation “an existing code” on lines 1-2 of claim 4 is interpreted as “the existing code”.

9. Claim 4 recites the limitation “a Concurrent Code Load” on line 2 of claim 4, which renders claim 4 indefinite because claim 1 recites “a Concurrent Code Load” on line 7 of claim 1. It is unclear whether the Concurrent Code Load on line 2 of claim 4 refers to the Concurrent Code Load on line 7 of claim 1 or whether this is another Concurrent Code Load. The limitation “a Concurrent Code Load” on line 2 of claim 4 is interpreted as “the Concurrent Code Load”.

10. Claim 6 recites the limitation “a code update image” on line 2 of claim 6, which renders claim 6 indefinite because claim 1 recites “a code update image” on line 8 of claim 1. It is unclear whether the code update image on line 2 of claim 6 refers to the code update image on

line 8 of claim 1 or whether this is another code update image. The limitation “a code update image” on line 2 of claim 6 is interpreted as “the code update image”.

Claims 7-8 are rejected for dependency upon rejected base claim 6 above.

11. Claim 6 recites the limitation "the (m)th code update" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as “a (m)th code update”.

Claims 7-8 are rejected for dependency upon rejected base claim 6 above.

12. Claim 6 recites the limitation "the (m-1)th code update" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as “a (m-1)th code update”.

Claims 7-8 are rejected for dependency upon rejected base claim 6 above.

13. Claim 7 recites the limitation "said controller" in lines 1-2 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as “said processor”.

Claim 8 is rejected for dependency upon rejected base claim 7 above.

14. Claim 9 recites the limitation “an information storage and retrieval system” on line 2 of claim 9, which renders claim 9 indefinite because claim 1 recites “an information storage and retrieval system” on line 1 of claim 1. It is unclear whether the information storage and retrieval

system on line 2 of claim 9 refers to the information storage and retrieval system on line 1 of claim 1 or whether this is another information storage and retrieval system. The limitation “an information storage and retrieval system” on line 2 of claim 9 is interpreted as “the information storage and retrieval system”.

Claim 10 is rejected for dependency upon rejected base claim 9 above.

15. Claim 9 recites the limitation “a processor” on line 4 of claim 9, which renders claim 9 indefinite because claim 1 recites “one or more processors” on lines 3-4 of claim 1. It is unclear whether the processor on line 4 of claim 9 refers to the one or more processors on lines 3-4 of claim 1 or whether this is another processor. The limitation “a processor” on line 4 of claim 9 is interpreted as “said one processor”.

Claim 10 is rejected for dependency upon rejected base claim 9 above.

16. Claim 11 recites the limitation "the (i)th phase" in line 11 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as “(i)th phase”.

Claims 12-18 are rejected for dependency upon rejected base claim 11 above.

17. Claim 15 recites the limitation “a code update image” on line 3 of claim 15, which renders claim 15 indefinite because claim 11 recites “a code update image” on line 9 of claim 11. It is unclear whether the code update image on line 3 of claim 15 refers to the code update image

on line 9 of claim 11 or whether this is another code update image. The limitation "a code update image" on line 3 of claim 15 is interpreted as "the code update image".

Claim 16 is rejected for dependency upon rejected base claim 15 above.

18. Claim 15 recites the limitation "the (m)th code update" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "a (m)th code update".

Claim 16 is rejected for dependency upon rejected base claim 15 above.

19. Claim 15 recites the limitation "the (m-1)th code update" in line 5 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "a (m-1)th code update".

Claim 16 is rejected for dependency upon rejected base claim 15 above.

20. Claim 17 recites the limitation "a processor" on line 3 of claim 17, which renders claim 17 indefinite because claim 11 recites "one or more processors" on line 5 of claim 11. It is unclear whether the processor on line 3 of claim 17 refers to the one or more processors on line 5 of claim 11 or whether this is another processor. The limitation "a processor" on line 3 of claim 17 is interpreted as "said one processor".

Claim 18 is rejected for dependency upon rejected base claim 17 above.

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21. Claim 19 recites the limitation "the (i)th phase" in line 13 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "(i)th phase".

Claims 20-26 are rejected for dependency upon rejected base claim 19 above.

22. Claim 23 recites the limitation "a code update image" on lines 2-3 of claim 23, which renders claim 23 indefinite because claim 19 recites "a code update image" on line 10 of claim 19. It is unclear whether the code update image on lines 2-3 of claim 23 refers to the code update image on line 10 of claim 19 or whether this is another code update image. The limitation "a code update image" on lines 2-3 of claim 23 is interpreted as "the code update image".

Claim 24 is rejected for dependency upon rejected base claim 23 above.

23. Claim 23 recites the limitation "the (m)th code update" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "a (m)th code update".

Claim 24 is rejected for dependency upon rejected base claim 23 above.

24. Claim 23 recites the limitation "the (m-1)th code update" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "a (m-1)th code update".

Claim 24 is rejected for dependency upon rejected base claim 23 above.

25. Claim 25 recites the limitation “a processor” on line 3 of claim 25, which renders claim 25 indefinite because claim 19 recites “one or more processors” on line 5 of claim 19. It is unclear whether the processor on line 3 of claim 25 refers to the one or more processors on line 5 of claim 19 or whether this is another processor. The limitation “a processor” on line 3 of claim 25 is interpreted as “said one processor”.

Claim 26 is rejected for dependency upon rejected base claim 25 above.

***Claim Rejections - 35 USC § 102***

26. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

27. Claims 1-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Bemis (U.S. 5,487,160).

**Per Claim 1:**

The Bemis patent discloses:

**- providing an information storage and retrieval system comprising one or more processors; providing existing code, wherein said one or more processors use said existing code to operate said information storage and retrieval system, and wherein said existing**

**code includes a Concurrent Code Load having (N) phases** (“There is provided, in accordance with the present invention, a method for concurrently backing up the contents of a disk storage system to a backup storage device ... The array controller coordinates the operation of the multitude of disk drives within the array to perform read and write functions ... The controller exchanges data with the host computer system (not shown) through Host Interface and CRC Logic block 200. Host I/F Logic block 200, under the control of processor 101 ... During execution of the backup procedures data is moved in logical block sequence (0 to N) from the array to the backup device, such as a magnetic tape, continuing until the entire array has been transferred. ...” in column 3, lines 20-25; column 4, lines 26-33; and column 7, lines 43-46)

- generating a code update image comprising a Temporal Coupling File, wherein said **Concurrent Code Load includes instructions to read said Temporal Coupling File;** providing said code update image to said information storage and retrieval system (“... Should a write request be received by the array controller during backup, the block address associated with the write request is checked to determine if the original data at that address has been written to the backup device. If the original data residing at the target block address has been written to the backup device the write request is scheduled for execution by the array controller. ...” in column 7, lines 46-53)

- executing the (i)th phase of said Concurrent Code Load, wherein (i) is greater than or equal to 1 and less than or equal to (N), and wherein (i) is initially set to 1 (“... During execution of the backup procedures data is moved in logical block sequence (0 to N) from the

array to the backup device, such as a magnetic tape, continuing until the entire array has been transferred. ... " in column 7, lines 43-46)

**- determining if said (i)th phase of said Concurrent Code Load invokes said Temporal Coupling File; operative if said (i)th phase of said Concurrent Code Load invokes said Temporal Coupling File, reading instructions for said (i)th phase of said Concurrent Code Load from said Temporal Coupling File, and executing said instructions for said (i)th phase of said Concurrent Code Load; completing said (i)th phase of said Concurrent Code Load; ascertaining if (i) equals (N); operative if (i) equals (N), operating said information storage and retrieval system using said code update ("... Should a write request be received by the array controller during backup, the block address associated with the write request is checked to determine if the original data at that address has been written to the backup device. If the original data residing at the target block address has been written to the backup device the write request is scheduled for execution by the array controller. However, if the original data residing at the target block address has not yet been written to the backup device, the original images of the data blocks are copied to the spare drive, or to a storage buffer, prior to scheduled execution of the write request. ... " in column 7, lines 46-57).**

**Per Claim 2:**

The Bemis patent discloses:

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**- operative if (i) does not equals (N): incrementing (i); repeating said executing, determining, completing, and ascertaining steps, and optionally said reading, executing, and incrementing steps (column 7, lines 43-46).**

**Per Claim 3:**

The Bemis patent discloses:

**- providing a Concurrent Code Load which includes (N) indicators, wherein each of said (N) indicators is assigned to a different one of said (N) phases, and wherein each of said (N) indicators can have a first value or a second value; wherein said determining step further includes examining the (i)th; operative if said (i)th indicator is set to said first value, ascertaining that the (i)th phase of the Concurrent Code Load does not invoke the Temporal Coupling File; and operative if the (i)th indicator is set to said second value, ascertaining that the (i)th phase of the Concurrent Code Load does invoke the Temporal Coupling File (column 8, lines 23-32 and lines 39-60).**

**Per Claim 4:**

The Bemis patent discloses:

**- further comprising the step of providing an existing code which includes a Concurrent Code Load comprising 10 phases (column 7, lines 43-46).**

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**Per Claim 5:**

The Bemis patent discloses:

**- creating said existing code at a first time; installing said existing code in said information storage and retrieval system at a second time; creating said Temporal Coupling File at a third time, wherein said third time is later than both said first time and said second time** (column 8, lines 3-32).

**Per Claim 6:**

The Bemis patent discloses:

**- providing a code update image comprising the (m)th code update, wherein said executing step includes determining if the (m-l)th code update has been installed** (column 7, lines 43-46).

**Per Claim 7:**

The Bemis patent discloses:

**- further comprising the step of determining by said controller if the (m-1)th code update has been installed; wherein said Temporal Coupling File includes instructions which cause said processor to determine if the (m-1)th code update has been installed** (column 7, lines 43-46).

**Per Claim 8:**

The Bemis patent discloses:

- further comprising the step of generating an error message if the (m-1)th code update has not been installed (column 5, lines 2-7).

**Per Claim 9:**

The Bemis patent discloses:

- providing an information storage and retrieval system comprising one or more disk arrays and two or more clusters, wherein each of said two or more clusters includes, a processor, one or more device adapters interconnected to said one or more disk arrays, and said existing code, and wherein said Concurrent Code Load includes quiescing I/O to a first one of said two or more clusters; determining by a controller disposed in said first cluster if one or more device adapters disposed in a second one of said two or more clusters are operational before said first processor quiesces I/O to said first cluster; wherein said Temporal Coupling File includes instructions which cause said first processor to determine if one or more device adapters disposed in said second cluster are operational before quiescing I/O to said first cluster (column 4, lines 22-63).

**Per Claim 10:**

The Bemis patent discloses:

**- further comprising the step of generating an error message if one or more device adapters disposed in said second cluster are not operational (column 5, lines 2-7).**

**Per Claims 11-14 & 16-18:**

These are article of manufacture versions of the claimed method discussed above (claims 1-3, 5 and 8-10, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Bemis.

**Per Claim 15:**

This is an article of manufacture version of the claimed method discussed above (claims 6 and 7), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Bemis.

**Per Claims 19-22 & 24-26:**

These are computer program product versions of the claimed method discussed above (claims 1-3, 5 and 8-10, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Bemis.

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**Per Claim 23:**

This is a computer program product version of the claimed method discussed above (claims 6 and 7), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also anticipated by Bemis.

***Conclusion***

28. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be reached on Mondays through Fridays from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y Zhen, can be reached on (571) 272-3708. The fax phone number for the organization where this application or processing is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Qamrun Nahar*

QN  
June 20, 2007

*Mary Statman*  
*Primary Examiner*